DOCUMENT RESUME

ED 320 884 SP 032 438

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TITLE Sacred Cows in Educational Psychology: How Accurate and Relevant Is Our Textbook Information?
PUB DATE 31 Jan 90
NOTE 22p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Cognitive Style; Content Analysis; *Controversial Issues (Course Content); Developmental Stages; *Educational Psychology; Higher Education; *Piagetian Theory; Preservice Teacher Education; *Self Fulfilling Prophecies; Textbook Content; *Textbook Evaluation
IDENTIFIERS Piaget (Jean)

ABSTRACT

Five commonly used educational psychology textbooks were reviewed in terms of the accuracy and comprehensiveness of their coverage of three controversial topics: Piagetian theory; self-fulfilling prophecy; and learning styles. Although textbook coverages were accurate as written, they often failed to convey the degree of controversy that exists concerning these topics. Such oversimplification of complex issues could affect relevancy with regard to the complexities of classroom environments. Also, because some of the controversies provide opportunities to teach relevant problem-solving skills, the controversies need more emphasis than they receive in the textbooks examined. The appendix provides lists of trend statements in Piagetian theory, self-fulfilling prophecy, and learning styles. (Author/JD)

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Sacred Cows In Educational Psychology: How Accurate and Relevant is Our Textbook Information?

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January 31, 1990

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ABSTRACT

Five commonly used educational psychology textbooks were reviewed in terms of the accuracy and comprehensiveness of their coverage of these three controversial topics: Piagetian theory, Self-fulfilling Prophecy, and Learning Styles. Although textbook coverages were accurate as written, they often failed to convey the degree of controversy that exists concerning these topics. The implications of textbook coverage of controversy for undergraduate teacher preparation is discussed.

Sacred Cows in Educational Psychology: How Accurate and Relevant is our Textbook Information?

Educational psychology is a low consensus field, in which theoretical controversies abound. One would expect, therefore, that educational psychology textbooks would reflect this lack of consensus, and the complex nature of the field. However, in commenting on textbook coverage of Piagetian theory, Brown and Desforges (1977) made the following observation.

> Basic educational psychology courses seldom have sufficient time for all those issues which lecturers would wish to pursue. Consequently, simplified, second-hand sources are attractive. Unfortunately, such texts seldom address themselves to any criticisms of Piaget's theory other than those which have been termed undergraduate criticisms..." (p. 8).

Although, Brown and Desforges used this comment as a springboard to their discussion of "more serious criticisms" of Piagetian theory, the comment seems to have wider implications. Obviously, it is a fairly unfavorable description of textbook coverage of an

important topic. This leads one to wonder if this characterization is accurate, not only for Piaget but for other important topics as well. It should be noted that this is just not an academic concern. Educational psychology courses have an important role in providing the theoretical basis for educational practice, and future teachers' understanding of theory can influence greatly how they interact with their students. It is reasonable to be concerned about the consequences of misapplication that may occur when teachers have incomplete understandings of important concepts

In light of this concern, we decided to evaluate textbook coverage of three important topics in educational psychology. The three selected topics are: Piagetian stage theory, the self-fulfilling prophecy, and learning styles. In particular, we were looking to see if frequently used educational psychology textbooks presented accurate and balanced views of the controversial areas within these topics.

Method

First, online computer searches of ERIC and PSYCHLIT were conducted for each of the topics. Based on a reading of the literature, research conclusions or

rend statements were developed for each area. These trend statements identified major conclusions and controversies for each of the topics (See Appendix A).

The next step was to select five frequently used educational psychology textbooks. Based on conversations with textbook representatives, and personal experience with reviewing textbooks, the following five books were selected:

1. Biehler, R. F. & Snowman, J. (1990). Psychology Applied to Teaching (6th Ed.)
2. Glover, J. A. & Bruning, R. H. (1990). Educational Psychology Principles and Applications (3rd Ed.)
3. Slavin, R. E. (1988). Educational Psychology Theory into Practice (2nd Ed.)
4. Sprinthall, N. A. & Sprinthall, R. C. (1990). Educational Psychology A Developmental Approach (5th Ed.)
5. Woolfolk, A. E. (1990). Educational Psychology (4th Ed.)

Next, each textbook was reviewed separately by each of the two authors of this paper to determine if these trend statements were reflected in the textbook coverage of the material. Each author read and

reviewed each text separately, and then met together to compare evaluations and to form a common impression through discussion.

Results

Piagetian Psychology

All five textbooks contained fairly extensive coverage of Piaget's ideas concerning cognition and cognitive development. Although all nine trend statements were addressed by at least one textbook, there was, however, considerable variance in terms of how the different trends were handled.

Of the five textbooks covered, three of them discuss information-processing models as alternatives to Piagetian cognitive developmental theory within the same chapter (Glover & Bruning, Sprinthall & Sprinthall, & Woolfolk). The remaining two texts briefly discuss memory and or metacognitive development in the chapter on information-processing. In none of the texts is the discussion on development from the information-processing as extensive as the discussion on Piagetian theory.

All of the textbooks except the Glover and Bruning text discuss at least some of the research findings that have contradicted Piagetian theory. Three of the

exts (Biehler & Snowman, Slavin, and Woolfolk) have a section of the cognitive development chapter that specifically discusses criticisms and reactions to Piagetian theory. None of these sections is longer than two pages, while the average number of pages devoted to Piaget in the three texts is sixteen pages. Although the Sprinthall and Sprinthall text discusses research findings that are typically used as criticisms of Piaget, the authors integrate these findings into their discussion of Piaget, and tend to interpret or misrepresent them in ways consistent with Piagetian theory. For example, the lack of consistency in cross-cultural research that others have reported (Ashton, 1975) is reported as a consistent finding or trend by the authors.

All of the texts that contain a "criticisms section" discuss the idea that the nature of the Piagetian tasks causes children's abilities to be underestimated in the three early stages. None of the three texts, however, provides an elaborated example of this effect. Interestingly, Biehler and Snowman discuss the problems with the Piagetian tasks, and then recommend in their Suggestions for Teaching section that teachers use Piagetian tasks to assess the "level

and type of thinking in each child..." (p. 73).

All three texts discuss the idea that many people do not reach the formal operations stage. The Woolfolk and the Biehler and Snowman text discuss the doubts that have been expressed concerning the notion that cognitive development occurs through a series of four fixed and universal stages. The Biehler and Snowman text and the Slavin text discuss the idea that performance on Piagetian tasks can be improved with training and experience. Only Woolfolk discusses intra-stage variability as a challenge to Piagetian stage theory. All of the text discuss general applications of Piagetian ideas to education, but no text seriously critiques the attempts to apply Piagetian theory to education.

In conclusion, all five texts contain substantial treatments of basic Piagetian concepts. Three texts contain discussions on information-processing models as alternatives to Piagetian theory. It is unlikely that anyone reading these texts, however, would get the impression that there are serious challenges to parts of Piagetian theory.

Self- Fulfilling Prophecy

All of the texts except Glover and Bruning

contain discussions of the original Pygmalion study and additional work done in the area of teacher expectations.

All of the presentations of the original study are accurate, except for the Sprinthall and Sprinthall treatment. On page 379, the authors state that:

> At the end of the school term, the results showed that the pupils originally identified as in the growth-spurt group did much better on a series of tests than the other pupils. Their academic performances had improved and, especially, in the early grades, their measured IQs were significantly higher than the other pupils'

Although they have paraphrased Rosenthal and Jacobsen's statement of findings accurately, it has been fairly well documented that the increase in IQ was found only in the first two grade levels (Wineburg, 1987). The effect did not exist in the upper grades, so the statement of increasing effect for the early grades also is misleading.

All four texts report that there had been interpretive and methodological concerns with the original study. Only the Biehler and Snowman text specifically mentions that the conclusions drawn by

Rosenthal and Jacobsen did not match the data. None of the texts discusses the methodological concerns raised in the critiques or the improbable data reported in the original study (See Wineburg, 1977 for a review of these issues).

The attempts to replicate Pygmalion are only mentioned in two texts (Biehler & Snowman and Woolfolk). Only Woolfolk specifically mentions that the replication attempts generally failed, and neither mentions that four of the attempts were undertaken by Rosenthal (Wineburg, 1987). In fact, one of these failures is reported on page 96 of Pygmalion (Rosenthal & Jacobsen, 1968).

The difficulty that has been encountered in achieving the Pygmalion effect with IQ as a dependent measure is discussed only in the Biehler and Snowman text.

All four texts discuss the research on the relationship between teacher expectations and teacher behavior toward low and high achievers. Two texts discuss expectation as both a teacher effect on students and a student effect on teachers (Sprinthall & Sprinthall, and Woolfolk). In terms of the accuracy issue, only Woolfolk discusses this distinction and its

possible implications.

In conclusion, all four of the texts that contain discussions of teacher expectations emphasize that teacher expectations influence student behavior. Although they all address some of the issues with this position, none of them addresses the issues or criticisms of this research in a comprehensive manner.

Learning Styles

Only two of the texts discuss the learning styles area (Woolfolk and Slavin). Biehler and Snowman discuss cognitive styles, but not learning styles. Slavin only discusses perceptual modality preference, field independence-dependence, and conceptual tempo. The only instructional application he discusses is multimodal presentations.

The only comprehensive treatment is Woolfolk's. In her discussion, Woolfolk covers both cognitive styles and learning styles. Within her learning styles discussion, she alludes to multiple models of learning style (Dunn, Keefe, Gregorc, and Renzulli & Smith), but she does not discuss how this complicates the field. She discusses matching learning and teaching styles, and multimodal presentations as instructional interventions, and she states that these adaptations

will not necessarily lead to major improvements in achievement, but she does not cite research demonstrating strong negative effects of matching to preference under certain circumstances. She discusses the problems is using preference statements as indicators of strengths, and she discusses the unreliability of preference statements, especially for younger children. It should be noted, however, that most of these conclusions are made without supporting research.

Consequently, only one of the texts discusses learning styles in any comprehensive fashion, and although the presentation makes many of the salient points, supporting research often is not cited for the conclusions.

Discussion

The title of this article poses the question, "How accurate and relevant is our textbook information?" We can discuss this question at least as it pertains to the three topics and the five textbooks we have examined.

The accuracy issue can be approached from two directions. First, are there misreported ideas or findings. As would be expected, this type of

inaccuracy is rare. We only detected two examples of this for the topics and textbooks reviewed.

The second type of accuracy relates to the thoroughness of the presentation of a topic. It can be the case that what is written is accurate, but that material is omitted or de-emphasized, and in so doing, the authors fail to capture the complexity inherent in a topic. In this case, we leave students with a false sense of what is true and what is tentative, and leave them to discover the rest of the story for themselves with their own students.

Our analysis of the five textbooks produced results that are consistent with the concerns voiced by Brown and Desforges. Although criticisms and alternate viewpoints are presented for many of the topics, often they are presented in such a way as to minimize their importance. It is not the case that textbooks try to focus on the controversies, or to support strongly points of view that are contrary to what is typical for textbooks. For example, it is unlikely that an author would opt to frame a discussion of Piaget around the criticisms (Hence the name sacred cows).

We would like to propose that the oversimplification of complex issues could affect

relevancy. Simple ideas are often mismatched to the complexities of classroom environments. Beginning teachers are immediately struck by the wide variability in a classroom. However, a party line discussion of Piagetian stage theory suggests less variability than is there. Simplistic recommendations about identifying perceptual modality strengths and adjusting for them, fail to take into account the multitude of interacting variables that affect learning. It could be argued that the less our presentations match teachers' complex realities, the more likely they are to lose confidence in the ideas we present.

Of course, we need to maintain our perspective. While some of the theoretical complexities are only relevant to the academician, others have practical importance. There may be only minor dangers or no danger in some simplistic applications of ideas. For example, the teacher who strongly believes the self-fulfilling prophecy may try to be more positive with students, and may try to be careful with hearsay evidence. All of this is generally appropriate and may outweigh the problem of failing to make use of potentially helpful information from files as early as he or she might. On the other hand, the teacher who

sets extremely high standards in the belief that students live up to teachers' expectations, may be in danger of seriously mismatching instruction to students' abilities and needs.

Additionally, some of these controversies provide opportunities to teach very relevant problem solving skills. For example, the research on modifying Piagetian tasks to improve performance has direct relevance to classroom teaching. Teachers need to understand that there is considerable variance in poor performance. Tasks can be failed for a variety of reasons. Variables such as language, motivation, social skills, and memory not only affect Piagetian task performance, but they also affect classroom performance, and their effects can be tested or controlled. An important question may be whether textbook or lecture presentations that emphasize controversy are more helpful for developing teacher problem solving skills than other approaches.

The impact of simplistic textbook presentations on students' understanding of how to apply information, and the generality of those applications is somewhat speculative at this time. However, given the anecdotal evidence concerning misapplication of

theoretical ideas, and the potential for abuse, further research is warranted.

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APPENDIX A

TREND STATEMENTS--PIAGETIAN THEORY

1. Piagetian theory describes both how cognition occurs and how it develops.
2. Information-processing is an alternate explanation for cognition and cognitive development.
3. The fixed sequence and universality of Piaget's stages has been debated.
4. There is considerable within stage variation for children.
5. The extent of maturational constraint on development is unclear.
6. Children's failures on Piagetian tasks can be a result of the nature of the tasks.
7. Many adolescents and adults do not reach the formal operations stage, as assessed by Piagetian tasks.
8. Although active discovery learning may be appropriate for some learning goals, research has not supported this approach as universally effective for all children and or all learning outcomes.
9. The effectiveness of Piagetian-based education programs has not been demonstrated.

TREND STATEMENTS--SELF-FULFILLING PROPHECY

1. Several reviewers have identified interpretative and methodological problems with the original Pygmalion study.

2. Attempts to replicate Pygmalion have generally failed.

3. Reviews of the literature have found teacher expectation effects, but the finding is less robust than Pygmalion may have implied, especially when IQ is the dependent measure.

4. Current research has demonstrated differential teacher behavior patterns toward children they identify as low and high achievers.

5. The causal direction between student behavior and teachers' expectations is unclear.

6. There are times when differential expectations are desirable. Therefore accuarate and inaccurate teachers' expectations pose different research problems.

TREND STATEMENTS--LEARNING STYLES

1. There are a variety of definitions or conceptions of learning style, and these differences complicate attempts to apply the construct of learning styles.
2. Learning Style Based Education involves matching learning styles and teaching styles and or using multimodal presentations.
3. There are interpretative problems with using students' learning styles preferences to design instruction.
4. The technical adequacy of the learning styles assessment devices is variable.
5. The research on the usefulness of matching learning styles and teaching styles is mixed.
6. The more conservative recommendation of multimodal presentations can be defended without using the learning styles idea.